

REMARKS

I. CLAIM STATUS

Prior to the above amendment, claims 58-106 were pending, with claims 70-95 withdrawn from consideration by the Office pursuant to a Restriction Requirement dated February 11, 2008. By the above amendment, claim 58 has been amended without prejudice or disclaimer to recite certain elements of previous claim 68, namely an “elastomeric composition . . . [comprising] at least one elongational-viscosity-reducing additive chosen from glycidyl esters of an α -branched carboxylic acid containing from 6 to 22 carbon atoms” Accordingly, claim 68 has been cancelled. Withdrawn claims 70-95 have also been cancelled without prejudice or disclaimer. Thus, claims 58-67, 69, and 96-106 are pending and under examination.

Support for the above amendments may be found in the as-filed specification and claims, e.g., in original claim 11. Applicants submit that these amendments raise no issue of written description.

Applicants respond to the claim rejections in the Final Office Action dated April 14, 2009, as follows.

II. RESPONSE TO CLAIM REJECTIONS

A. 35 U.S.C. § 103(a) rejection of claims 58-67, 96-98, 100-103, 105, and 106 in view of Caretta, Takeyama, and Schaal

The Office rejects claims 58-67, 96-98, 100-103, 105, and 106 as being allegedly unpatentable under 35 U.S.C. § 103(a) over a combination of U.S. Pre-grant Publication No. 2001/0042586 to Caretta et al. (“Caretta”), U.S. Patent No. 6,334,919 to Takeyama et al. (“Takeyama”) and U.S. Patent No. 6,482,884 to Schaal et al. (“Schaal”). See Final

Office Action, pages 2-6. Applicants respectfully disagree with and traverse this rejection for at least the following reasons.

The Office bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. See M.P.E.P. § 2142. In *KSR Int'l Co. v. Teleflex Inc.*, 82 U.S.P.Q.2d 1385 (2007), the Supreme Court confirmed that the “framework for applying the statutory language of §103” is still based on its landmark decision in *Graham v. John Deere Co. of Kansas City*, 148 U.S.P.Q. 459 (1966). Under *Graham*, four factors must be considered when determining whether an invention is obvious: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) secondary considerations. 148 U.S.P.Q. at 467. The obviousness or non-obviousness of the claimed invention is then evaluated in view of the results of these inquiries. See *Graham*, 148 U.S.P.Q. 467; *see also KSR*, 82 U.S.P.Q. 2d at 1388. Implicit in this analysis is the requirement that the Office show that each and every element of the rejected claims is disclosed in the prior art. M.P.E.P. § 2143.03.

While Applicants respectfully continue to disagree with the Office's position for the reasons of record, which are incorporated herein by reference, Applicants have amended claim 58 without prejudice or disclaimer to incorporate certain elements of previous claim 68. In view of this amendment, Applicants submit that the Office cannot establish a *prima facie* case of obviousness, at least because Caretta, Takeyama, and Schaal fail to teach or suggest an “elastomeric composition . . . [comprising] at least one elongational-viscosity-reducing additive chosen from glycidyl esters of an α -branched

carboxylic acid containing from 6 to 22 carbon atoms . . . ,” as recited in amended claim 58.

The inadequacy of Caretta, Takeyama, and Schaal is confirmed by the fact that the Office did not reject previous claim 68 over these references in the Office Action. In addition, the Office cannot provided a tenable rational explaining *why* one of ordinary skill would see any reason to modify or combine Caretta, Takeyama, and Schaal in an attempt to arrive at the claimed invention.

For at least the foregoing reasons, Applicants submit that the 35 U.S.C. § 103(a) rejection of claims 58-67, 96-98, 100-103, 105, and 106 is improper, and should be withdrawn.

B. 35 U.S.C. § 103(a) rejection of claims 68 and 69 in view of Caretta, Takeyama, Schaal, and Wittenwyler

The Office rejects claims 68 and 69 as being allegedly unpatentable over a combination of Caretta, Takeyama, Schaal, and U.S. Patent No. 3,865,777 to Wittenwyler (“Wittenwyler”) for the reasons stated on pages 6 and 7 of the Final Office Action. Because claim 68 has been cancelled, this rejection is now moot. However, inasmuch as the Office may apply similar reasoning to reject amended independent claim 58, Applicants submit the following remarks.

As an initial matter, Applicants maintain that the pending claims are patentable over Caretta, Takeyama, Schaal, and Wittenwyler for the reasons of record, which are specifically incorporated herein by reference. For the sake of brevity, such reasons are not repeated herein. Applicants further submit that the pending claims are patentable over Caretta, Takeyama, Schaal, and Wittenwyler for at least the following reasons.

Amended claim 58 recites, *inter alia*, “A process for producing a tyre, comprising: feeding an elastomeric composition to an extruder . . . wherein the elastomeric composition comprises at least one elongational-viscosity-reducing additive chosen from glycidyl esters of an α -branched carboxylic acid containing from 6 to 22 carbon atoms” Applicants maintain that Caretta, Takeyama, Schaal, and Wittenwyler, whether considered alone or in combination, fail to teach or suggest at least these claim elements.

Caretta discloses a “method of manufacturing components for a tire for vehicle wheels” (Caretta, ¶ [0001]), and Takeyama is drawn to a process for producing a polymer composition for use in the air permeation layer of a tire (*see Takeyama*, column 9, lines 15-20). Neither reference teaches or suggests, however, a method wherein an elastomeric composition comprising “ . . . at least one elongational-viscosity-reducing additive chosen from glycidyl esters of an α -branched carboxylic acid containing from 6 to 22 carbon atoms” is used, as recited in pending claim 58. The Office tacitly admitted this fact by electing not to reject previous claim 68 in view of Caretta, Takeyama, and Schaal in the Office Action.

The Office relies on a combination of Schaal and Wittenwyler in an attempt to cure the deficiencies of Caretta and Takeyama. See Office Action, pages 6-7. In particular, the Office alleges that Schaal teaches glycidyl esters that are “substantially similar” to the claimed esters and which are used to reduce the viscosity of reinforced tire rubber compositions. See *id.* at 6-7. Further, the Office states that “[i]t would have been obvious to an ordinary skilled artisan at the time of the invention armed with the knowledge of Schaal to recognize that similarly structured small glycidyl esters would

have been able to perform a similar function and increasing[ly] obvious if said analogues are already characterized in the art as being known viscosity reducers.” *Id.* at 7. In support of this position, the Office turns to Wittenwyler for the disclosure additional small glycidyl esters, stating that “it would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized the glycidyl ester of Wittenwyler for the purpose of reducing the viscosity of Schaal’s rubber composition with predictable success.” *Id.*

Applicants respectfully disagree, because the Office has provided no basis for one skilled in the art to select a glycidyl ester from the extensive laundry list of possible compounds identified by Schaal or to select the glycidyl esters of Wittenwyler because of their alleged similarity to the compounds of Schaal. As stated by the Federal Circuit, “post-KSR, a prima facie case of obviousness for a chemical compound still, in general, begins with the reasoned identification of a lead compound.” *Esai Co. v. Dr. Reddy’s Lab. Ltd.*, 533 F.3d 1353, 1359 (Fed. Cir. 2008); see also, *Takeda Chem. Indus. Ltd., v. Mylan Labs. Inc.*, 549 F.3d 1381, __ (Fed. Cir. 2007) (finding no prima facie case of obviousness where party failed to provide a reason to select compound b from all of the other compounds in the prior art, despite its structural similarity to the claimed compound); M.P.E.P. § 2144.08(5) (“The fact-findings should specifically articulate what teachings or suggestions in the prior art would have motivated one of ordinary skill in the art to select the claimed species or subgenus”) .

Here, the Office has relied solely on hindsight to select glycidyl esters from the scores of compounds and classifications of compounds identified by Schaal. Nothing in

Schaal teaches or suggests to a person skilled in the art to make this necessary selection of a “lead compound.”

Even if, *arguendo*, one of ordinary skill in the art could make the necessary selection of a lead compound from Schaal, which Applicants do not concede, the Office still cannot establish a *prima facie* case of obviousness because none of the cited references provide any information explaining **why** one of ordinary skill would make the particular molecular modifications necessary to arrive at the claimed invention. See *Takeda Chem. Indus. Ltd., v. Alphapharm PTY., Ltd*, 492 F.3d 1350, 1356 (Fed. Cir. 2007) (explaining that to establish a prima facie case of obviousness in the chemical context, “it is necessary to establish that “the prior art would have suggested making the specific molecular modifications necessary to achieve the claimed invention . . .”).

In this regard, Applicants acknowledge the Office’s reliance on the alleged structural similarity between the claimed glycidyl esters and various compounds of Schaal in support of its obviousness argument. In response, Applicants again direct the Office to *Takeda Chem.*, where the Federal Circuit explained that “structural similarity between claimed and prior art subject matter... where the prior art gives reason or motivation to make the claimed compositions, creates a prima facie case of obviousness.” *Id.* (quoting *In re Dillon*, 919 F.2d 688, 692 (Fed. Cir. 1990) (emphasis added); See also *Eli Lilly and Co. v. Zenith Goldline Pharmaceuticals, Inc.*, 2001 U.S. Dist. LEXIS 18361 at 24 (S.D. Ind. 2001). Further, the court stated that “it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound.” *Id.* at 1357 (emphasis added).

Applying the above rules, the Federal Circuit found Takeda's invention to be valid and patentable, at least because 'nothing in the prior art... [suggested] making the specific molecular modifications... that are necessary to achieve the claimed compounds.' See *id.* at 1356, 1360. Among other things, the court found that "there was no reasonable expectation in the art that changing the . . . [structure of the prior art compound] would result in beneficial changes." *Id.* at 1361.

The present case is analogous to *Takeda Chem.* in that: 1) Schaal is characterized by the Office as disclosing compounds that are structurally similar, but nonetheless structurally distinct from the compounds of the claimed invention; 2) the asserted structural similarity is the primary basis for the rejection; 3) the Office has pointed to nothing in the prior art that would suggest to one of ordinary skill in the art to make the specific molecular modifications necessary to arrive at the claimed invention; and 4) both Schaal and the supporting reference, Wittenwyler, fail to provide any disclosure that explains *why* one of ordinary skill in the art would modify Schaal's compounds in an attempt to arrive at the claimed invention. See *Takeda*, 492 F.3d 1350 at 1355-57.

In particular, nothing in Schaal or Wittenwyler explains *how* one of skill in the art would know to modify the expressly disclosed compounds of Schaal, or how to choose among the potentially infinite number of glycidyl esters and other viscosity reducing additives of Schaal in order to arrive at a method that utilizes the claimed glycidyl esters. Indeed, neither Schaal or Wittenwyler point to specific structural features of glycidyl esters that correlate with their efficacy as a viscosity reducing additive. Thus, Applicants submit that Schaal and Wittenwyler do not explain how one of ordinary skill

in the art would know to modify Schaal's glycidyl esters to arrive at the claimed glycidyl esters, and the Office has erred in failing to provide the requisite explanation.

Of course, Applicants acknowledge the Office's reliance on Wittenwyler for the suggestion of small glycidyl esters. See Office Action, page 7. Applicants respectfully submit, however, that the Office has not explained *why or how* one of ordinary skill in the art would use Wittenwyler's glycidyl esters instead of Schaal's allegedly "substantially similar compositions" in a process for producing a tire. Such an explanation is particularly necessary, given that Schaal is drawn to a process for improving the processability and stability of **tire compositions** by **reducing** silica-silica interactions (Schaal, cols. 1-3), whereas Wittenwyler is drawn to the process for improving **foundry cores** by combining polyepoxide binders to **reinforce** sand. See Wittenwyler, column 3, lines 15-22 and 45-47. Given the divergent applications (reducing the interactions between silica versus reinforcing sand particles), Applicants submit that one of ordinary skill would see no reason to using Wittenwyler's glycidyl esters in a method for improving a tire, as per Schaal. Moreover, the Office has provided no explanation as to *why* one of ordinary skill in the art, seeking to improve a process for producing a tire, would see any reason to look to the completely divergent art of foundry core processing for guidance.

Accordingly, the Office should follow the Federal Circuit's lead in *Takeda* and find the pending claims patentable over Caretta, Takeyama, Schaal, and Wittenwyler. That is, because the crux of the Office's position simply relies on structural similarity between the claimed glycidyl esters and the compounds of Schaal, but does not identify reasons that would have led one of ordinary skill in the art to make the required modifications,

the Office has failed to meet the burden of establishing a *prima facie* case of obviousness.

For at least the foregoing reasons, Applicants submit that Caretta, Takeyama, Schaal, and Wittenwyler do not teach or suggest each and every element of the pending claims.

III. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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